1999 IMLS National Leadership Grants — Application Form 6.3

OMB No. 3137-0035
expires 12/31/2000

LL-90123
University of VA Health Sciences Li

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1. Applicant
University of Virginia Health Sciences Library

2. Applicant's Mailing Address
Office of Sponsored Programs, P.O. BOx 9003

3. City
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4. State
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5. Zip Code
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6. Name and Title of Authorizing Official
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7. Business Phone of Authorizing Official
(804) 924-4270

8. Name of Project Director
Joan Echtenkamp Klein

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(804) 924-0052

10. FAX Number of Applicant
(804)982-4238

11. e-mail address of Project Director
jre@virginia.edu

12. Sponsoring institution/parent organization, if applicable (e.g., municipality, state, or university)
☐ check if this entity will manage funds if an award is made. Name and address:

13. Governing control of applicant [2]* (turn page for selections) * if 6, please specify _____

14. Type of organization [2]* (turn page for selection) select only one * if 14, please specify _____

15. Employer identification number 54-6001796

16. Type of project (turn page for selections) [3] select only one

17. Use of technology: [X] check box if application proposes the use of hardware and/or software as a significant aspect of the project.

18. GRANT AMOUNT REQUESTED $ 248,245 .00

19. Amount of Matching Funds $ 129,872 .00

20. Grant Period (Starting Date) 12 / 01 / 99 — 11 / 30 / 01 (Ending Date)

21. Identify other Federal agencies that either have contributed support or have a pending proposal for support of these project activities and indicate the amount of support contributed or requested.

Name of Agency	Contributed/Pending	Amount

22. In the space below, include the names of any organizations that are official partners of the project.

23. Certification:
Norma S. Miller, Director SOM
Grants & Contracts Administration
Signature of Authorizing Official

3/16/99
Date

Digitization, Identification, Description, and World Wide Access to the Philip S. Hench Walter Reed Yellow Fever Collection in Historical Collections and Services of The Claude Moore Health Sciences Library of the University of Virginia

Project Director:
Joan Echtenkamp Klein
Assistant Director for Historical Collections and Services
The Claude Moore Health Sciences Library, #234
University of Virginia Health Sciences Center, Charlottesville, Virginia 22908
(804) 924-0052

Requested Funding:
$248,045

Project Period:
December 1, 1999 - November 30, 2001

Project Summary:
Historical Collections and Services of The Claude Moore Health Sciences Library of the University of Virginia proposes to digitize, identify, arrange, describe, preserve and provide world wide access via the Internet to approximately 30,000 pages of manuscript material and 1,000 photographs from the Philip S. Hench Walter Reed Yellow Fever Collection. Philip S. Hench, M.D., was a prominent medical researcher who was awarded the Nobel Prize for his work with cortisone. Dr. Hench became fascinated with Walter Reed and his achievements and amassed a major personal research collection of original Reed and yellow fever materials. Walter Reed (1851-1902), a member of the University of Virginia's Medical Class of 1869, was a prolific correspondent, and most of the letters he wrote are in the Philip S. Hench Walter Reed Yellow Fever Collection. He and his team proved conclusively in 1900-1901 that the *Aedes aegypti* mosquito was the vector of transmission for yellow fever, thereby saving many lives that would otherwise have been lost to this public health scourge. The extensive Philip S. Hench Walter Reed Yellow Fever Collection contains a wealth of information to support research in many areas of historical inquiry, including but not limited to history of medicine and science, social history, biomedical ethics, military history, biographical information on the principle players in an astonishingly successful public health investigation and campaign, the history of family and interpersonal relationships in the nineteenth century, and tropical medicine.

The Philip S. Hench Yellow Fever Collection project will provide a model for the integration of state-of-the-art, standards compliant information technology and scholarly resources to make unique library resources more widely available; it will be a boon for scholars to have these materials available to them in their homes and offices instead of having to travel to Charlottesville, Virginia to use the collection. Digitization of the Philip S. Hench Yellow Fever Collection will also serve to preserve rare and fragile materials. The original materials, both manuscripts and photographs, will be digitized and presented in a searchable database that will be freely accessible through the World Wide Web. The online Philip S. Hench Walter Reed Yellow Fever Collection will be constructed to enable researchers to tailor their searches and approach the digitized materials to best suit their personal interests and needs.

The in-house work of the project will be done by one grant-funded staff member and two grant-funded student assistants, under the guidance of the Assistant Director for Historical Collections and Services. Coordination, training, and advice during the project will be provided by the Head of Intellectual Access, the Associate Director for Information Systems, the Internet/Clinical Information Services Coordinator, and the Historical Collections and Services Library Assistant. The Director of the University of Virginia's Electronic Text Center and the Director of the University of Virginia Library Special Collections Digital Center will also provide advice and counsel.

Digitization, Identification, Description, and World Wide Access to the Philip S. Hench Walter Reed Yellow Fever Collection in Historical Collections and Services of The Claude Moore Health Sciences Library of the University of Virginia

Application Narrative

Significance of the Materials

In 1900, the United States Army Yellow Fever Commission, headed by Walter Reed (I851-1902), made a dramatic discovery and achieved a great breakthrough in medicine for which Reed was awarded the Congressional Medal of Honor and elevated to the status of health hero in the popular press and imagination. At experimental stations just outside Havana, Major Walter Reed and the other members of the Yellow Fever Commission -- James Carroll (1854-1907), Aristides Agramonte (1868-1931), and Jesse Lazear (1866-1900) -proved that the *Aedes aegypti* mosquito was the vector for the yellow fever virus. Their work in Cuba destroyed the popular notion that yellow fever spread by direct contact with infected people or "contaminated" objects and focused the people's efforts on the eradication of the *Aedes* mosquito.

Walter Reed was born in Gloucester County, Virginia, on September 13, 1851, the son of Lemuel Sutton Reed and Pharaba White Reed, both from North Carolina. Walter was one of five children born to Lemuel and Pharaba Reed. In 1866 when Walter was fifteen years old the Reed family moved to Charlottesville, Virginia. Reed entered the University of Virginia at the age of sixteen. He completed the requirements and graduated from the University of Virginia School of Medicine in 1869, as the youngest graduate ever from that program. He left Charlottesville for New York City, where he matriculated at Bellevue Hospital Medical College.

Following completion of his program of primarily clinical study at Bellevue, he moved on to Kings County Hospital in Brooklyn and then to a residency at Brooklyn City Hospital. His appointment to the Brooklyn Board of Health as an assistant sanitary officer at the age of twenty-two introduced him to his future career in public health and disease control and prevention.

It was at this time that he met his future wife, Emily (Emilie) Lawrence, from Murfreesboro, North Carolina. His letters to her begin in 1874 and continue for the rest of his life. His was a voluminous correspondence and his letters were full of both professional and personal details. He writes Emilie long letters full of information about parties and scientific experiments; he tells her of his hopes and dreams and shares with her news of his successes and failures.

Reed was granted his commission in the United States Army Medical Corps in 1875. After serving as an army surgeon at remote sites in Arizona, Nebraska, and Alabama, Reed was assigned to Baltimore's Fort McHenry in October of 1890. The Fort McHenry assignment allowed Reed to participate in a seven-month pathology and bacteriology course at Johns Hopkins Hospital. There he worked with Dr. William Welch in the pathology of typhoid fever and on the identification of the hog cholera bacillus. Army Surgeon-General George Miller Sternberg was impressed by Reed's work at Johns Hopkins. In 1893 he appointed Reed -Professor of Clinical and Sanitary Microscopy at the new Army Medical School in Washington, with a joint appointment as curator of the Army Medical Museum. One of Reed's first projects in Washington was collaborating with Sternberg on a smallpox vaccine study. In 1895, Reed studied an outbreak of malaria near Washington. He observed that the marshlands played some role in the spread of malaria, yet he dismissed the suggestion that mosquitoes carried the disease. In 1898, following the declaration of war on Spain, Sternberg selected Reed, Victor Vaughan, and E.O. Shakespeare to examine the American military camps in order to ascertain the cause of the typhoid epidemic. They concluded that typhoid was the result of filthy living conditions. Two years later, Sternberg made Reed officer-in-charge of the Yellow Fever Commission.

Yellow fever had been the scourge that had had significant effects on social life and local economies in the United States throughout the eighteenth and nineteenth centuries. At the height of the 1793 yellow fever epidemic in Philadelphia, labor was in short supply, commerce slowed to a fraction of its usual pace, and merchants, especially those whose goods were perishable, suffered heavy losses. This combination of factors accelerated the city's decline and loss of place to New York City as the key port of the United States. Between1817 and 1900, yellow fever had struck nearly every summer in cities on the southeastern and Gulf coasts. New Orleans was yellow fever's favorite American target. The New Orleans epidemic of 1853 killed nine thousand people. After city authorities incorporated

the Reed team's discoveries, New Orleans suffered only one yellow fever epidemic--the epidemic of 1905, the last outbreak of yellow fever in the United States. The control of *Aedes* and the subsequent elimination of yellow fever in America saved innumerable lives and millions of dollars in commercial losses.

The Philip S. Hench Walter Reed Yellow Fever Collection provides a vast, unique resource of primary materials to support research in many areas of historical inquiry. Materials in the collection include correspondence and photos of the principal figures in the yellow fever investigations: Walter Reed, James Carroll, Jesse Lazear, Army Surgeon-General George Miller Sternberg, Henry Rose Carter, Jefferson Randolph Kean, Leonard Wood, William Crawford Gorgas. The letters Reed wrote his wife are many and provide a fascinating first person look at Reed throughout his life. The collection also includes the research materials of Philip S. Hench which detail his quest for information on the life and work of Reed. Hench corresponded with and visited most of the primary and secondary characters in this public health drama that outlived Walter Reed. Artifacts such as the fever chart and microscope and slides of Jesse Lazear, who died in Cuba after being bitten by a mosquito carrying the yellow fever virus, add depth and richness to the Philip S. Hench Collection.

Some avenues for exploration using the collection include the history of medicine and science, social history, military history, biographical information on the principal players in an astonishingly successful public health investigation and campaign, the history of family and interpersonal relationships in the nineteenth century, tropical medicine, and biomedical ethics.

The name of Walter Reed has become synonymous with self-experimentation in medicine. Informed consent is also a hallmark of the Yellow Fever Commission. The Commission needed human subjects in order to test the mosquito theory because, at the time, no one knew of any animals susceptible to the disease. The commissioners agreed to experiment on themselves before requesting volunteers. Several Spanish immigrants participated in the experiments, but the majority of volunteers came from Lieutenant Albert E. Truby's Hospital Detachment at Camp Columbia. Governor-General Leonard Wood authorized Reed to offer the volunteers a $100 gold piece. To a poor Spanish immigrant or an underpaid army private, this was considerable incentive. Added to this was the likelihood of contracting yellow fever naturally during their assignment in Cuba, a point that Reed emphasized in the consent form. Reed said it would be better to contract yellow fever in a controlled environment where one could receive immediate medical attention from reputable physicians than to unexpectedly develop yellow fever in a remote camp where adequate care was unlikely. Even so, Reed stated the possibility that volunteers might die during the experiment. The members of the Yellow Fever Commission are considered the first advocates of informed consent because of their conscientious approach to human experimentation.

National Impact of the Project

Walter Reed wrote the following to his wife Emilie on December 31, 1900: "*Only 10 minutes of the old century remain, lovie, dear. Here I have been sitting reading that most wonderful book, La Roche on Yellow Fever, written in 1853. Forty-seven years later it has been permitted to me and my assistants to lift the impenetrable veil that has surrounded the causation of this most dreadful pest of humanity and to put it on a rational and scientific basis. I thank God that this has been accomplished during the latter days of the old century. May it cure be wrought out in the early days of the new century! The prayer that has been mine for twenty or more years that I might be permitted in some way or sometime to do something to alleviate human suffering has been answered!*" His own, deeply emotional words echo through the century and speak directly to the importance of his discovery and its impact on humankind.

The Philip S. Hench Walter Reed Yellow Fever Collection is one of the cornerstone collections of the Historical Collections and Services Department of the Claude Moore Health Sciences Library at the University of Virginia. The Claude Moore Health Sciences Library is the central information resource and information gateway for the School of Medicine faculty and students, as well as for the School of Nursing, the Medical Center, scientists in other University departments, and practicing health professionals in the western half of Virginia - a primary clientele numbering more than 7,000 users. A staff of 15 professional librarians and 30 support personnel provide onsite services 103 hours per week in a centrally located facility about to undergo extensive renovation with the support of $5.5 million in state funds. An extensive web site (http://www.med.virginia.edu/hs-library/) organizes information about the Library's resources and services and contains class tutorials and other content. The Library also manages the Health Sciences Center-wide Web site. In addition to 1600 print journals, the Library provides electronic access to an extensive array

of databases, online journals, and electronic textbooks 24 hours a day, 365 days a year from a computing facility of 2 NT servers and 2 IBM Unix computers. The Library's projected 1999/2000 operations budget is $3.5 million.

The Library's Historical Collections and Services supports research in all aspects of the history of the health sciences. The extensive departmental holdings include rare books, journals containing classic or landmark articles, manuscript and archival collections, photographs, and medical and surgical artifacts. Historical Collections and Services staff members create exhibits on various topics in the history of the health sciences, which are first displayed physically in the Library. These exhibits are then converted to World Wide Web sites and made available to researchers throughout the world. Visitors to these virtual exhibits are plentiful and the Library's statistics bear out the popularity of these online educational opportunities. In addition to the history of medicine classes physically located at the University, whose students come to Historical Collections and Services to use our primary materials, many more students and faculty are able to make use of the materials thanks to our presence on the World Wide Web. One example of a successful online exhibit, which makes extensive use of materials from the Philip S. Hench Walter Reed Yellow Fever Collection is The United States Army Yellow Fever Commission and the Spanish-American War; Science and Politics in Latin America, 1898-1904 (http://www.med.virginia.edu/hs-library/historical/yelfev/tabcon/html). A medical researcher who lives in Paris visited this online exhibit and was so impressed with the information presented that he requested copies for each participant in an international conference on yellow fever, which was held in Dakar, Senegal in 1998. He felt that the people working on yellow fever today should have an historical perspective of the disease and its effects, which the exhibit and the collection from which it was drawn provide.

Researchers who have visited Historical Collections and Services and made extensive use of the Philip S. Hench Walter Reed Yellow Fever Collection include several authors whose books relied on the unique materials found in this vast collection. Examples include *Who Goes First?: The Story of Self-Experimentation in Medicine* by Lawrence Altman (University of California Press, 1998, new edition in paperback; Random House, Inc., 1987), which includes the chapter “The Myth of Walter Reed" and *Subjected to Science: Human Experimentation in America Before the Second World War* by Susan E. Lederer (Johns Hopkins University Press, 1997, new edition in paperback; Johns Hopkins University Press, 1995). William Bennett Bean wrote his biography *Walter Reed* (University of Virginia Press, 1982) using the materials from the Philip S. Hench Walter Reed Yellow Fever Collection. He gave his research materials and papers to Historical Collections and Services, and this collection complements the Hench Collection. Historical Collections and Services also owns an extensive collection of monographs pertaining to yellow fever, which complement the Hench and Bean Collections. There are also numerous monographic and manuscript holdings in Historical Collections and Services relevant to febrile diseases, public health, epidemiology, health care in wartime, sanitary reform, biomedical ethics, and other topics related to the Philip S. Hench Walter Reed Yellow Fever Collection, which are not included in the scope of this project.

A major national symposium on the history and evolution of biomedical ethics will be held at the University of Virginia Health Sciences Center in Spring 2001. Sessions will include papers on informed consent and self-experimentation, with a focus on Walter Reed and the work of his Yellow Fever Commission.

The Philip S. Hench Walter Reed Yellow Fever Collection digitization project provides a wonderful means of promoting the education of learners in the 21st century. This project makes scholarly information widely available and encourages critical thinking in users of the materials.

The Claude Moore Health Sciences Library proposes to increase awareness and use of the Philip S. Hench Walter Reed Yellow Fever Collection by employing a multi-stage process of digitizing the manuscripts and photographs and building a searchable World Wide Web-accessible database that incorporates the digital images and data. The Library proposes to position the Philip S. Hench Walter Reed Yellow Fever project as an innovative combination of new technologies that provide enhanced access to important scholarly resources. eXtensible Mark-up Language (XML) is being positioned as a leading Web development technology. It will enable a new generation of content-delivery applications. Initial research into the definition of industry-specific markup tags will provide the starting point for many projects to come.

Adaptability

The digitization of the Philip S. Hench Walter Reed Yellow Fever Collection offers application at several levels, both wide-scale and local adaptation.

Locally the project will be a significant addition to the digital holdings of the Health Sciences Library, and to the University of Virginia Library's internationally recognized collection of electronic texts. Although the Philip S. Hench Walter Reed Yellow Fever Collection will be housed here on the Library's server, the collection database will also be integrated as part of a larger medical collection that includes the Philip S. Hench Walter Reed Yellow Fever Collection project as well as the James Carmichael Papers, a collection of 19th century letters written by patients to their physician (currently being digitized in collaboration with the University of Virginia Library Special Collections Digital Center). The two collections represent the beginning stages of a much larger initiative to actively pursue, purchase, and digitize additional medical collections of historical significance. These databases would be integrated to allow seamless searching across collections. The model we develop to digitize the Philip S. Hench Walter Reed Yellow Fever Collection would be applied to other future projects.

The method we are using for making the Philip S. Hench Walter Reed Yellow Fever Collection accessible also has application both locally and nationally. Using XML instead of HTML will allow us to create other applications that support enhanced flexibility to define document types specific to the field of medicine, thereby supporting increased searching, and presentation of content. This project will define our architectural standards for further collection publication. By agreeing to cooperate with markup standards developed here at the University of Virginia, we set the stage for continued development and interoperability.

The Project's Plan of Work

A. Preparation for the Project

Work Environment - physical and virtual:
As part of the Library's current building renovation a workroom will be established in Historical Collections where all historical collections processing will take place. The workroom will be furnished and fully networked by the start of this grant. Further equipment and software needs include 3 scanning and editing Pentium workstations (3 flatbed scanners, 3 4x CD writers), Adobe PhotoShop for image scanning, manipulation, and editing, and Debabelizer software for batch processing of images.

In addition, prior to the start of this project, space will be allocated and developed on the Library's Intranet that will support the collaborative work of project participants and streamline quality review measures that are conducted on a weekly and monthly basis.

Participants:
The scope of this project requires the formation of a Project Team made up of the Assistant Director of Historical Collections, who will serve as Project Supervisor; the Associate Director of Information Systems; the Internet/Clinical Information Services Coordinator; the Head of Intellectual Access; and the Historical Collections and Services Library Assistant. All members of the Project Team, each with their own area of expertise, and under the direction of the Project Supervisor, will provide training and coordination during different phases of the project, e.g., scanning, database development, cataloging and indexing, and Web site design.

In addition, this project requires hiring three more additional staff (development staff) for the duration of the two-year grant. The development staff, made up of two student assistants, and a production editor (classified staff), will be supervised by the Project Supervisor and trained initially by both the Associate Director of Information Systems and the lntermet/Clinical Information Services Coordinator.

Project Assessment and Quality Review:
To ensure the highest possible productivity among all project participants, training procedures, workflow guidelines, and access to the Yellow Fever inventory database, will be in place at the start of the grant period. A quality review of the work will occur on a weekly basis by the Project Team, and a full assessment of the project will occur on a monthly basis with involvement by all project participants - development staff and Project Team. Project assessment will include status reports from each professional management staff member, review of project milestones, and, when applicable, testing by other Library staff and selected faculty members and historians, to assess ease of use, and searching specificity and robustness.

B. Workflow

The project collection is divided into four media types: 30,000 pages of manuscripts; 1,000 photographs and maps; and I00 artifacts. With an inventory database of the collection already in place, each collection piece is already assigned a unique number that will identify the piece throughout the entire project.

The scope of this collection is divided into four series: The Walter Reed series, the Jesse Lazear series, the James Carroll series, and the Philip S. Hench series. Prior to the work of the development staff, the Project Supervisor will have prioritized the collection by series, and within each series identified which parts of the series to digitize first. In general, in each series, manuscripts are given priority since they require the most amount of work following digitization. Photographs, maps, and artifacts will be done during the 6^{th} and 7^{th} quarter work phase (see part C., Schedule of Completion) when the final set of manuscripts is being transcribed. Although not a part of this grant request, the Project Supervisor will identify key monographs from the collection, no longer restricted by copyright, which will be digitized, either in part or in their entirety, and integrated as complementary components to the project. The digitization of each of the four series will follow the detailed media-type work plan listed below.

Manuscripts:

Digitizing:
Each manuscript will be scanned in full color resolution at 600 dots per inch and saved as uncompressed Tagged Image File Format images (TIFF). Each image will be saved on CD, and then batch-processed using Debabelizer to create two Web-ready images. Debabelizer batch-processing of the images will occur in two steps. The first step will convert the TIFF image to Joint Photographic Experts Group (JPEG) format, and then size and save the JPEG at a compression level and resolution that optimizes image quality while reducing file size, thereby minimizing Web browser load time. Each photo will then be opened in Adobe PhotoShop to adjust hue, saturation, brightness, and contrast. The second batch processing step will save the JPEG in a smaller thumbnail size (reduced pixel dimension from previous JPEG dimension) and saved in JPEG format at a compression level and resolution that optimizes image quality and reduces file size. Both images will be saved to CD, as backup, and a working copy of both images stored on the project's IBM RS-6000 server. Recording and maintaining images to CD provides three benefits: archival, flexibility for later use, and as a convenient medium to pass on to the contractor for transcription and markup. The Project Team will check image quality as part of the weekly quality review.

Transcription and XML Markup of Manuscripts:
Prior to the initial phases of textual digitization, the Project Team will develop specific requirements for personal letters containing medical information, experimentation, epidemiology, and known information needs based on past use of this manuscript collection, etc. We intend to take advantage of the existing standards of EAD (Encoded Archival Description), TEI (Text Encoding Initiative), and US-MARC data fields specific to manuscripts. Daniel Pitti, the original developer of EAD and Project Director for the Institute for Advanced Technology in the Humanities at the University of Virginia, will provide training for the entire Project Team. Any future standards that are developed between now and commencement of this project will be adhered to, to ensure retrieval of information across institutional boundaries. Every effort will be made to contribute discoveries and successes of our application of XML with library and information agencies. David Seaman of the University of Virginia Electronic Text Center will work with the Project Team during this most critical phase of the project.

Following the development of an appropriate tagset, each manuscript/letter will be transcribed and saved as an XML document. The actual transcription and descriptive markup will be subcontracted, under the supervision of the Project Supervisor to ensure quality control. Special subject and content markup will be represented in the XML format following the established guidelines.

Photographs and Maps:
Collection photographs to be digitized for this project include- both black and white and color prints. Photographs and maps will be digitized using the same method detailed above for manuscript digitization. Larger photographs and maps will be scanned in sections and then pieced back together using Adobe PhotoShop. The Project Supervisor will write descriptions for each piece.

Artifacts:
The artifacts will be digitized by the University of Virginia Library Special Collections Digital Center, under contract and under the direction of Edward Gaynor, Digital Center Director. David Seaman, Director of the University of Virginia Electronic Text Center, will provide further advice and supervision.

C. Schedule of Completion

1. December 1999 through February 2000

- project equipment purchased
- database design and systems analysis
- bring IBM RS-6000 server online
- staff hired and trained on technical work procedures and standards
- start digitizing - Walter Reed series
- request bids from electronic conversion contractors for transcription and markup
- conduct 1st quarter review - disseminate to the Project Advisory Committee: the Health Sciences Library director, Associate Director, members of the project team, David Seaman of the University of Virginia Electronic Text Center, and Edward Gaynor of the University of Virginia Digital Center. In addition to the Project Advisory Committee, selected faculty members and historians will be asked to critique the project as it develops. Reviews will also be available from the Historical Collections publicly accessible Internet site.

2. March 2000 through May 2000

- Project Supervisor interviews prospective researchers to understand collection needs
- Associate Director for IS, coordinates development of database structure for images
- Project Team develops tagsets using TEI, EAD, and US-MARC guidelines
- conduct 2nd quarter review - disseminate to the Project Advisory Committee and selected faculty members and historians

3. June 2000 through August 2000

- begin transcription of Walter Reed series
- begin digitization of Jesse Lazear series
- begin batch-processing of images and save to database on server
- conduct 3rd quarter review - disseminate to the Project Advisory Committee and selected faculty members and historians

4. September 2000 through November 2000

- begin digitization of James Carroll and Philip S. Hench series
- continue batch-processing of images and populating database
- begin markup of Walter Reed series
- Head of Intellectual Access creates workplan for integrating project database into Library's public access catalog
- conduct 1st year status report and review - disseminate to the Project Advisory Committee and selected faculty members and historians

5. December 2000 through February 2001

- continue batch-processing of images and populating database and publish prototype Web site for review
- Internet/Clinical Info Services Coordinator begins Web site information architecture, design, and search engine.
- conduct 1st quarter review - disseminate to the Project Advisory Committee and selected faculty members and historians

6. March 2001 through May 2001

- begin digitization of photographs and maps
- Project Supervisor writes descriptions for artifacts Web site design continues
- Head of Intellectual Access conducts meta-analysis to integrate collection components
- conduct 2nd quarter review - disseminate to the Project Advisory Committee and selected faculty members and historians

7. June 2001 through August 2001

- work with University of Virginia Library Special Collections Digital Center and Electronic Text Center to digitize artifacts
- Project Supervisor writes comprehensive guide to the collection
- tag guide according to Encoded Archival Description (EAD) guidelines
- conduct 3rd quarter review - disseminate to the Project Advisory Committee and selected faculty members and historians

8. September 2001 through November 2001

- complete project-database
- complete Web site including search engine configuration
- launch site to Library staff and Project Advisory Committee for testing and feedback
- prepare public relations campaign
- prepare final project report - disseminate to the Project Advisory Committee and selected faculty members and historians
- announce to public on December 1, 2001

The Project's Staff

Library personnel contributing time to the project:

The Philip S. Hench Walter Reed Yellow Fever Collection project requires the formation of a Project Team, made up of the Assistant Director for Historical Collections and Services, who will serve as Project Supervisor, the Associate Director of Information Services, the Internet/ Clinical Information Services Coordinator, the Head of Intellectual Access, and the Historical Collections and Services Library Assistant. All members of the Project Team, each with their own areas of expertise, and under the direction of the Project Supervisor, will provide training and coordination during different phases of the project, e.g. scanning, database development, cataloging and indexing, and Web site design. Each member of the Project Team will devote 10% of his or her time to this project.

Joan Echtenkamp Klein, Assistant Director for Historical Collections and Services and Assistant Professor of Medical Education, has an M.S.L.S. from the Catholic University of America. She has been Assistant Director for Historical Collections and Services since its inception as a department within the Health Sciences Library in January 1982. From 1977 through 1981 she worked in the Manuscripts Department of the University of Virginia Library. She is active in many professional organizations and has given presentations at many professional meetings. In 1996 she co-taught a course in the renowned Rare Book School, "Introduction into the Curatorship of Historical Health Sciences Collections." She is a faculty member in the Humanities in Medicine Program of the University of Virginia School of Medicine. She organized a major symposium, "Doing Bad in the Name of Good?: The Tuskegee Syphilis Study and Its Legacy" that led to the creation of the Tuskegee Syphilis Study Legacy Committee and the subsequent apology by President Clinton at the White House in 1997 to the survivors of the Study.

Aulia Gies, Associate Director of Information Services, received his B.S. in Computer Science from the University of Virginia. He was a programmer/analyst from 1984 to 1990. From 1990 to the present he has been the Associate Director for Information Services at the Claude Moore Health Sciences Library. He has expertise in various systems and is currently enrolled in the Master's program in Health Evaluation Sciences at the University of Virginia.

Kim Guenther, Internet/Clinical Information Services Coordinator, will coordinate the project phases related to Web development and design. Ms. Guenther has an M.L.S. degree from the University of Maryland. Since March 1997, she has served as the Internet/Clinical Information Services Coordinator and Health Sciences Center Webmaster and oversees the development of the Health Sciences Center Internet and Health Sciences Library lntranet and Internet Web sites, related clinically-based Web projects, and leads an interdisciplinary team providing Web development support to over 150 departments, centers, and divisions. She has over seven years experience in managing large-scale Web sites for both nonprofit and for-profit corporations. She also writes and teaches on Internet-related topics.

Nadine Ellero Ferki, Head of Intellectual Access, will direct the intellectual access initiatives incorporated in this project. She will be directly involved with the XML setup for all marked text as well as all cataloging represented in

the library's online catalog and national utility (e.g. OCLC). Ms. Ferki has an M.L.S. degree from the State University of New York at Buffalo. She has been Head of Intellectual Access since July 1998,was Assistant Director for Bibliographic Control at the Claude Moore Health Sciences Library from September1990-July 1998, and was a National Library of Medicine Associate from September 1989-August 1990. She team-taught an MLA accredited course, "Internet Resources Management."

Joby Topper, Historical Collections and Services Assistant will manage and trouble-shoot on a day-to-day basis. He received his B.A. in History from Frostburg State University. He worked in Historical Collections and Services from 1996-1998, then worked in Bibliographic Control as a Library Assistant from 1998 through January 1999, returning to Historical Collections and Services February 1, 1999. He helps create Historical Collections and Services Web exhibits, catalogs rare materials, and provides research assistance.

Evaluation and Dissemination

The Philip S. Hench Walter Reed Yellow Fever Collection project will be evaluated both as a separate project and as an important component of emerging digital libraries of The Claude Moore Health Sciences Library and the University of Virginia Library. A detailed report will be submitted to the Institute of Museum and Library Services and will be made publicly available as part of the project's Web site. The Project Team will work closely with faculty members and selected researchers throughout the project to ensure that it is on track to meet scholars' needs.

The Philip S. Hench Walter Reed Yellow Fever Collection project will be freely disseminated throughout the world on the Internet. It will be demonstrated at exhibits and presentations at major professional conferences and meetings, including but not limited to, the American Association of the History of Medicine (AAHM); the Association of Archivists and Librarians in the History of the Health Sciences (ALHHS); the American Library Association (ALA); the Medical Library Association (MLA); the Mid-Atlantic Regional Archives conference (MARAC ; the Society of American Archivists (SAA); the Science, Health Care and Technology Roundtable of the Society of American Archivists; the American Association for the History of Nursing ; the Mid-Atlantic Chapter of the Medical Library Association (MAC); the Rare Books and Manuscripts Section of the Association of College and Research Libraries (ACRL RBMS pre-conference), and Web00.

Papers and reports concerning the Philip S. Hench Walter Reed Yellow Fever Collection project will be submitted to professional journals and publications, including but not limited to, *The American Archivist*, *The Bulletin of the History of Medicine*; *The Watermark*. *The Newsletter of the Archivists and Librarians in the History of the Health Sciences*; *The Mid-Atlantic Archivist, MLA News, Bulletin of the American Association for the History of Nursing*; LITA's *Information Technology and Libraries, Academic and Library Computing*; *Virginia Magazine of History and Biography*, *Computers in Libraries*, *Online*, *Database*, and *WebNet Journal* The Claude Moore Health Sciences Library will publicize the results of the project through news releases, campus publications, and announcements to electronic bulletin boards and listservs such as Archives, Exlibds, CADUCEUS, Va-Hist, Diglib, Medlib, and Nurhis. Researchers and audiences both inside and outside of the University and Virginia will be targeted.

The Claude Moore Health Sciences Library has a considerable interest in making sure the research for this project is successfully carried out and that its results are followed up with further research and development. Classroom and research uses for the Philip S. Hench Walter Reed Yellow Fever Collection project will actively be sought, both within and outside of the University of Virginia. The Claude Moore Health Sciences Library will work towards national acceptance of the Philip S. Hench Walter Reed Yellow Fever Collection project as a model for other research libraries and repositories to make unique materials widely accessible by integrating primary resources with scholarly research in a use-neutral format constructed with state-of-the-art library and information technology.

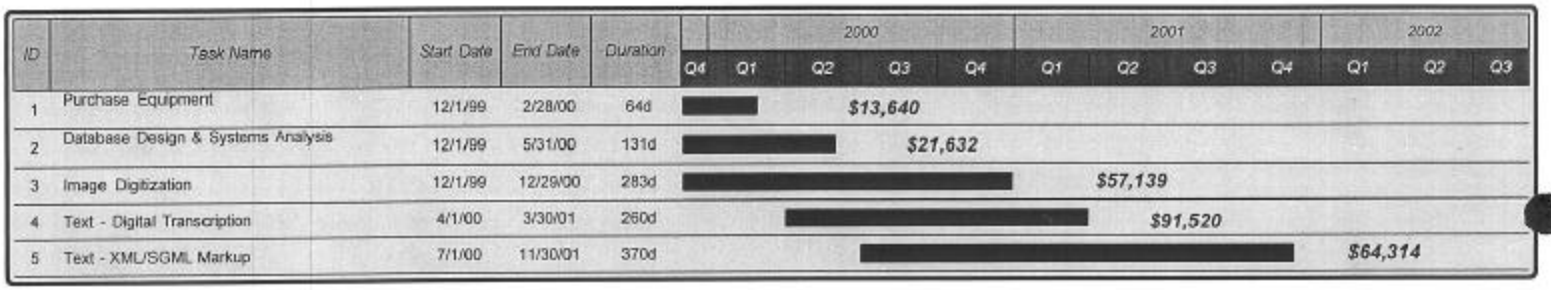
Sustainability, Technical Knowledge, and Information Access

With a significant backlog of projects that have not been developed, the work done in developing our first XML collection will set the standard for all future work in Web publication. This project will define our architectural standards for further collection publication. By agreeing to cooperate with markup standards developed here at University of Virginia, we set the stage for continued development and interoperability.

Numerous Information Technology (IT experts and pundits have discussed the current IT environment and have positioned the XML standard as the leading Web development technology. XML has even been designated as the format for Microsoft's Windows 2000 office suite. The next version of both Netscape and IE browsers will begin to be compatible with XML. Using XML's synthesis of SGML and HTML will allow us to create richer applications than we have been able to produce in the past. With entire institutions just beginning to explore the potential of XML, early projects, such as the Philip S. Hench Walter Reed Yellow Fever Collection project, will provide an efficient springboard to a whole new generation of Web-based applications based on dynamic and customized content delivery.

SCHEDULE OF COMPLETION

ID	Task Name	Start Date	End Date	Duration
1	Purchase Equipment	12/1/99	2/28/00	64d
2	Database Design & Systems Analysis	12/1/99	5/31/00	131d
3	Image Digitization	12/1/99	12/29/00	283d
4	Text - Digital Transcription	4/1/00	3/30/01	260d
5	Text - XML/SGML Markup	7/1/00	11/30/01	370d



Total: $248,245

Budget Narrative

We are requesting $250,000 from the Institute for Museum and Library Services to support digitization, identification, description, and world wide access to the Philip S. Hench Walter Reed Fever Collection. The Yellow Fever collection has long been a cornerstone of the Historical Collections and Services Department providing rich and unique, content to a wide variety of scholars from different fields and disciplines. Recognizing the importance of expanding access to this collection, the Claude Moore Health Sciences Library will contribute an additional $129,872 toward this project

Of the funds we are requesting from B&S, $13,500 will be used to purchase 3 scanning/editing workstations, and software for database development/management and XML editing. Another$19,500 is provided in matching funds from the Library for a total of $33,000.

The project requires that we hire three additional staff for the duration of the two-year grant and we are requesting $103,385 from BALS to hire and develop this three-person development team. This figure includes both salaries and benefits paid out over the two-year grant period (salary-.$85,960; benefits: $17,425). The Library will match another $78,119 to fund the development team and the work provided by in-house staff also for the duration of the project (salary: $65,921; benefits: $12,198). Another $2,000 IMLS funds are requested for training fees with the Library matching an additional $2,000. Staff development expenses, both now hires and in-house, total $181,324. Digital Initiative Seminare are budgeted at $1,371.

Consultants for this project include both the Director of the University of Virginia Electronic Text Center and the Director of the University of Virginia Library Special Collections' Digital Center. We are requesting $6,400 from IMLS to cover consulting fees as necessary for the development of the collection database and the design and markup of content. These costs will be allocated throughout the project and represent a fraction of the amount we would need to spend to hire outside consultants.

Transcription and subsequent markup of the collection together represent the most time intensive part of the project encompassing nearly seven quarters of an eight-quarter (two years) project. We are requesting $71,500 from IMLS and matching another $6,000 for a total of $77,500 to be allocated toward these services

In total the requested IMLS funds represent 65.8% of total project costs. The $129,872 that the Library provides in matching funds represents the commitment we are making to this project. Two factors have led us to a decision to take an active role in the production of our digital collection. These two factors are the early status of the XML industry and the handwritten nature of the collection. By using a full-time production editor we feel we can insure, the high quality of the collection. Our budget request to IMLS reflects the fact that the Philip S. Hench Walter Reed Yellow Fever Collection project is very labor intensive. Several new technologies have emerged as offering us the tools we need. However, each strategy will require detailed analysis. This analysis will take place as products are released and production becomes imminent. Once specific database and editing software is selected, we intend to take advantage of company expertise in their own products to get us off to an efficient start.

Project Budget Form Front

SECTION 1: DETAILED BUDGET

Year 1

Name of Applicant University of Virginia

IMPORTANT! READ INSTRUCTIONS ON PAGE 5.2 BEFORE PROCEEDING.

SALARIES AND WAGES (PERMANENT STAFF)

NAME/TITLE	NO.	METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
		TOTAL SALARIES AND WAGES	$	21,391	21,391

SALARIES AND WAGES (TEMPORARY STAFF HIRED FOR PROJECT)

NAME/TITLE	NO.	METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
Student wage	(2)	20hrs/wk/50 wks	19,640	7,000	26,640
Production Editor	(1)	Grade 8 @ 100%	25,000		25,000
	( )				
	( )				
		TOTAL SALARIES AND WAGES	$ 44,640	7,000	51,640

FRINGE BENEFITS

RATE	SALARY BASE	IMLS	MATCH	TOTAL
	TOTAL FRINGE BENEFITS	$ 8,500	5,950	14,450

CONSULTANT FEES

NAME/TYPE OF CONSULTANT	RATE OF COMPENSATION (DAILY OR HOURLY)	NO. OF DAYS (OR HRS) ON PROJECT	IMLS	MATCH	TOTAL
Database design	150	16	2,400		2,400
Content design/markup	100	40	4,000		4,000
	TOTAL CONSULTATION FEES		$ 6,400		6,400

TRAVEL

FROM/TO	NUMBER OF: PERSONS	DAYS	SUBSISTENCE COSTS	TRANSPORTATION COSTS	IMLS	MATCH	TOTAL
Digital Initiative					1,371		1,371
Seminars (as announced							
( )	( )						
( )	( )						
		TOTAL TRAVEL COSTS			$		

Project Budget Form Back

SECTION 1 CONTINUED

Year 1

MATERIALS, SUPPLIES, AND EQUIPMENT

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
Workstations(scan/edit)	3@ 4,000	8,000	4,000	12,000
DBMS software	1@10,000	5,000	5,000	10,000
XML editing software	2@ 500	500	500	1,000
Database Server	1@10,000		10,000	10,000
TOTAL COST OF MATERIAL, SUPPLIES, & EQUIPMENTS		13,500	19,500	33,000

SERVICES

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
Transcription/markup	31,000 pgs @ $2.50 ea.	71,500	6,000	77,500
	TOTAL SERVICES	$ 71,500	6,000	77,500

OTHER

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
Tuition	3 people	2,000	2,000	4,000
	TOTAL COST OF OTHER	$ 2,000	2,000	4,000
	TOTAL DIRECT PROJECT COSTS	$ 147,911	61,841	209,752

INDIRECT COSTS

Select either item A or B and complete C. (see page 5.2 for instructions on indirect costs)

Applicant is using

- A. an indirect cost rate which does not exceed 20% of direct costs

or

- B. an indirect cost rate negotiated with a Federal agency (copy attached)

Health and Human Services — Name of Federal Agency

7/31/98 — Effective Date of Agreement

C. Rate base(s) Amount(s)

28 % of $ 177,752

Amount: $ 49,771

add additional lines if pro rating indirect costs of partners; include all information for each partner claiming indirect costs

TOTAL INDIRECT COSTS $ 49,771

Project Budget Form Front

SECTION 1: DETAILED BUDGET
Year 2 (IF APPLICABLE)

Name of Applicant University of Virginia

IMPORTANT! READ INSTRUCTIONS ON PAGE 5.2 BEFORE PROCEEDING.

SALARIES AND WAGES (PERMANENT STAFF)

NAME/TITLE	NO.	METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
TOTAL SALARIES AND WAGES			$	22,460	22,460

SALARIES AND WAGES (TEMPORARY STAFF HIRED FOR PROJECT)

NAME/TITLE	NO.	METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
Student wage	(2)	20 hrs/wk/50 wks	15,070	15,070	30,140
Production editor	(1)	Grade 8 @ 100%	26,250		26,250
	( )				
	( )				
TOTAL SALARIES AND WAGES			$41,320	15,070	56,390

FRINGE BENEFITS

RATE	SALARY BASE	IMLS	MATCH	TOTAL
TOTAL FRINGE BENEFITS		$ 8,925	6,248	15,173

CONSULTANT FEES

NAME/TYPE OF CONSULTANT	RATE OF COMPENSATION (DAILY OR HOURLY)	NO. OF DAYS (OR HRS) ON PROJECT	IMLS	MATCH	TOTAL
TOTAL CONSULTATION FEES			$		

TRAVEL

FROM/TO	NUMBER OF: PERSONS	DAYS	SUBSISTENCE COSTS	TRANSPORTATION COSTS	IMLS	MATCH	TOTAL
	( )	( )					
	( )	( )					
	( )	( )					
	( )	( )					
TOTAL TRAVEL COSTS					$		

Project Budget Form Back

SECTION 1: CONTINUED

Year 2

MATERIALS, SUPPLIES, AND EQUIPMENT

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
TOTAL COST OF MATERIAL, SUPPLIES, & EQUIPMENT		$		

SERVICES

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
	TOTAL SERVICES	$		

OTHER

ITEM	BASIS/METHOD OF COST COMPUTATION	IMLS	MATCH	TOTAL
	TOTAL COST OF OTHER	$		
	TOTAL DIRECT PROJECT COSTS	$ 50,245	43,778	94,023

INDIRECT COSTS

Select either item A or B and complete C. (see page 5.2 for an explanation of indirect costs)

Applicant is using

- A. an indirect cost rate which does not exceed 20% of direct costs

or

- B. an indirect cost rate negotiated with a Federal agency (copy attached)

Health and Human Services — Name of Federal Agency

7/31/98 — Effective Date of Agreement

C. Rate base(s) Amount(s)

28 % of $ 94,023

Amount $ 26,326

add additional lines if pro rating indirect costs of partners; include all information for each partner claiming indirect costs

TOTAL INDIRECT COSTS $ 26,326

Project Budget Form

SECTION 2: SUMMARY BUDGET

Name of Applicant: University of Virginia

IMPORTANT! READ INSTRUCTIONS ON PAGE 5.2 BEFORE PROCEEDING.

DIRECT COSTS

TOTAL	IMLS	MATCH	
SALARIES AND WAGES	85,960	65,921	151,881
FRINGE BENEFITS	17,425	12,198	29,623
CONSULTANT FEES	6,400		6,400
TRAVEL	1,371		1,371
SUPPLIES & MATERIALS	13,500	19,500	33,000
SERVICES	71,500	6,000	77,500
OTHER	2,000	2,000	4,000
TOTAL DIRECT COSTS	$ 198,156	$ 105,619	$ 303,775
INDIRECT COSTS	$ 51,844	$ 24,253	$ 76,079
		TOTAL PROJECT COSTS	$ 379,872
AMOUNT OF CASH—MATCH		$ 105,619	
AMOUNT OF IN-KIND CONTRIBUTIONS		$ 24,253	
TOTAL AMOUNT OF COST SHARING (CASH AND IN-KIND CONTRIBUTIONS)			$ 129,872
AMOUNT REQUESTED FROM IMLS			$ 250,000
PERCENTAGE OF TOTAL PROJECT COSTS REQUESTED FROM IMLS (MAY NOT EXCEED 50% IF REQUEST IS ABOVE $250,000)			65.8 %

Have you received or requested funds for any of these project activities from another Federal agency? *(please circle one)* ■ Yes ■ No

If yes, name of agency _____ Date _____

Amount requested $ _____